Washington State Department of Transportation

Washington State Ferries

WASHINGTON STATE FERRIES
Pricing Strategies: Situation Assessment

During the 2007 legislative session, the Legislature passed Engrossed Substitute House Bill 2358 (ESHB 2358) - "the Ferry Bill" - and the associated biennial transportation budget ESHB 1094. Each of the pieces of legislation contains specific policy and operational directives to assess the efficiency and costs related to how Washington State Department of Transportation (WSDOT)/Washington State Ferries (WSF) provides service. The results of the studies conducted to address the legislation are intended to derive strategies for how WSDOT/WSF operates in the future.

The legislation identifies specific topics for study and requires new levels of cooperation and collaboration among the Legislature (through the Joint Transportation Committee (JTC) and the new JTC Ferry Policy Subcommittee), the Washington State Transportation Commission (WSTC), and WSDOT/WSF. These directives follow from the December 2006 JTC Ferry Financing Study (also referred to as Ferry Financing Phase 1 or the Cedar River Group Report) and are the next steps in the process of developing a policy framework to address the long-term sustainability of WSDOT/WSF.

The legislation specifically spells out a list of tasks and a rough timeline that are designed to begin to address the questions raised in the Ferry Financing Study and to develop an information base that can support the ultimate question of how to address the long-term WSF funding requirements. Specifically ESHB 2358 and many of the Budget Provisos are designed to:

1. **Provide new, improved and "audited" information** – Ridership forecast reconciliation, life cycle cost model (LCCM), customer survey, cost allocation methodology, JTC Ferry Policy Working Group Studies, pre-design study requirements
2. **Develop strategies to minimize costs or increase revenues** – Terminal design standards, operational strategies, pricing policy changes, co-development study, evaluate one-point toll collection, re-establish vehicle LOS

This situation assessment provides a foundation for the identification, analysis and adoption of **pricing strategies** as required by ESHB 2358. This component of the work plan is the key element of a pivotal shift in how WSF plans for its service and investment needs. Historically, ferry investments were driven by changes in demand and the objective was to maintain a reasonable level of service. This approach suggested that WSF was a passive participant in the process and would simply adjust investments and services to keep pace with changes in demand. The new approach requires WSF to try to proactively manage the demand for ferry services through the use of operational and pricing strategies to maximize the use of existing assets and minimize the need for additional investments. The balance of this memo addresses the following key issues:

- Legislative direction

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- Work that has already been done
- Preliminary identification of pricing strategies
- Potential operational issues
- Key evaluative criteria for potential strategies
- Relationship to other work elements
- Next steps

Legislative Direction

With the enactment of ESHB 2358, the Washington State Legislature provided new policy direction regarding how fare schedules should be developed in the future. The legislature had, in the past, provided limited guidance on tariff policy. RCW 47.60.326, which was repealed by ESHB 2358, included ten considerations that the WSTC could, but was not required to, consider including:

- The amount of subsidy available to the ferry system for maintenance and operation.
- The time and distance of ferry runs.
- The maintenance and operation costs for ferry runs, with a proper adjustment for higher costs of operating outmoded or less efficient equipment.
- The efficient distribution of traffic between cross-Sound routes.
- The desirability of reasonable rates for persons using the ferry system to commute daily to work and other frequent users who live in ferry-dependent communities.
- The effect of proposed fares in increasing walk-on and vehicular passenger use.
- The effect of proposed fares in promoting all types of ferry use during non-peak periods.
- The estimated revenues that are projected to be earned by the ferry system from commercial advertisements, parking, contracts, leases and other sources.
- The pre-purchase of multiple fares, whether for a single rider or multiple riders.
- Such other factors as prudent managers of a major ferry system would consider.

Now the legislature has provided specific direction regarding using pricing as part of an adaptive management approach to help regulate demand while maintaining an awareness of the impact of fares on communities and users. ESHB 2358 requires that "the department shall annually review fares and pricing policies applicable to the operation of the WSF…the department shall develop fare and pricing policy proposals that must:

- Recognize that each travel shed is unique, and might not have the same farebox recovery rate and the same pricing policies;
- Use data from the current market survey conducted by the WSTC;
- Be developed with input from affected ferry users by public hearing and by review with affected ferry advisory committees, in addition to the market survey:
- Generate the amount of revenue required by the biennial transportation budget;

- Consider the impacts on users, capacity, and local communities; and,
- Keep the fare schedules as simple as possible.

While developing fare and pricing policy proposals, WSF must consider the following:

- Options for using pricing to level vehicle peak demand; and
- Options for using pricing to increase off-peak ridership.

One of the significant changes in legislative direction is the change from language suggesting a range of issues that the Commission and WSDOT ***could*** consider to language that emphases the issues that ***must*** be considered in setting fare rules. While the Transportation Commission and WSDOT/WSF did consider the language in RCW 47.60.326 in formulating its policy proposals, there was significant latitude in choosing which factors to emphasize or how different objectives might be prioritized.

The other significant change is that the new language is broader, with fewer specific fare-setting considerations and a greater emphasis on the desirable outcomes of changes in fare rules. This change provides substantial flexibility to WSTC and WSDOT/WSF to focus on pricing options that might support *"adaptive management practices in its operating and capital programs so as to keep the costs of the Washington state ferries system as low as possible while continuously improving the quality and timeliness of service."* (ESHB 2358)

An example of where this flexibility will be critical is in the evaluation of current frequent-user policies. The previous legislative language listed "the desirability of reasonable rates for persons using the ferry system to commute daily to work and other frequent users who live in ferry-dependent communities" as a consideration in setting fares. Currently, on some of the commuter-oriented routes the percent of vehicles traveling using the frequent-user discounted fare (the lowest applicable vehicle fare) can be between 50% and as much as 80% during commute periods. A strategy designed to promote walk-on traffic or to level vehicle demand during the peak will likely need to address the current practice of charging the lowest price when there is the greatest demand which may work well to encourage walk-on use and less well to discourage vehicle use on congested sailings.

In addition to these changes in legislative direction, ESHB 2358 also directs the Transportation Commission to change the implementation date for fare increases from the traditional May time period to the fall, to better align fare proposals with the Legislative budget calendar. Under the new schedule, the legislature will be able to set the revenue requirements in the budget during the spring and then leave it the Commission and WSF/WSDOT to develop and implement fare proposals that will generate the necessary revenues. The legislation also precludes the Transportation Commission from raising fares until September 2009 or until pricing policies are modified to meet the new legislative direction, whichever is later.

The new legislative framework does not substantively change the process for setting fares or the authority to establish specific fare rules, leaving this authority with the Washington State Transportation Commission and WSDOT/WSF.

Tariff Policies and Existing Pricing Rules

In 1991 the Washington State Transportation Commission initiated the Tariff Policy Committee to evaluate WSF fare revenue requirements and make policy recommendations regarding both the structure and the amount of ferry fares. The Committee included a representative mix of policymakers, ferry riders and representatives of constituent groups. The initial charge was to develop a policy rationale and a set of fare rules that would provide a basis for fare setting given the legislative direction at that time. When the Committee was formed, the fare structure was largely a legacy of the original fare structure that was in place when WSF took over the ferry operation from the private operator in 1952.

Over the next decade, WSF developed and implemented a series of fare policies designed to provide a clear basis for setting fares based primarily on a systemwide perspective. These fare policies did not include any consideration of demand management or other forms of adaptive management now required by the legislature.

For the period before 2000, the focus was not on revenue generation, but rather on developing a rationale for how the cost burden was to be shared among the different customer classes. The key components of the current pricing rules were largely developed during this timeframe and included:

- **CUBE policy.** This policy framework states that vehicles should pay in proportion to the volume of space they use on the vehicle deck. The result of this is that every vehicle fare on a given route is pegged to the standard auto/driver fare (up to 20-feet in length). For example a 40-foot standard height vehicle with pay twice the car/driver fare. Overheight vehicles pay double the length-based standard height fare under the rationale that by providing overheight space, WSF cannot double deck the entire vehicle deck.
- **Tariff Route Equity.** This policy was developed to establish a time-based element to derive fares on different routes, somewhat analogous to a parking lot. The concept was an extension of the CUBE concept where in addition to paying in proportion to the space used, vehicles should also pay in proportion to the amount of time that they use the space. The only exception to the time-based rules occurs when routes are in a common travel shed and there are clear substitution possibilities. In these cases the routes in a common travel shed share the same fares to remove price from the consideration of route choice.
- **Vehicle to passenger ratio.** The relationship of the vehicle and passenger fares is a policy variable that has largely been unchanged since the WSTC normalized this ratio over all routes in the system in the 1970's.
- **Peak season surcharge.** A peak season surcharge is applied only to vehicle fares (except for the San Juan Islands and International Routes were passenger fares are also increased in the peak season) and is designed to reflect the increased demand for service during the May through October period. The majority of regular ferry users are able to avoid the peak season surcharges, as they do not apply to the multi-ride frequent user fare products.
- **Discounts.** There are a variety of discounts offered to classes of ferry customers, including senior/disabled passengers, youth passengers, and frequent users willing to purchase multi-ride fare products. The senior/disabled discount is a federal requirement

for public transportation agencies receiving federal funding. The others are a matter of policy.

- **Other policies:** There a number of other policies designed to address specific areas of policy interest such as the program for Agencies serving In-need populations, HOV and vanpool pricing and preferential loading policies, and the recreational vehicle promotional fare on the International route during the peak season.

In 2007, the WSTC disbanded the Tariff Policy Committee. In developing a set of pricing strategies that will be responsive to the new legislative direction, it will be necessary for WSTC and WSDOT/WSF to revisit the policy basis for the existing fare rules and determine how and if certain policy structures should be modified or amended to meet legislative direction.

While Washington State Ferries may not have a significant demand management component to its current policy framework, congestion conditions are already an ad hoc demand management tool. Lengthy wait times can and have resulted in a shift in modes—from vehicles to walk-ons, motorcycles, and vanpools—as well as shifts in time. It is important to be aware that ferry users already adapt their behavior to the existing incentives and disincentives of the system in place. The examination and recommendation of pricing strategies is a way to approach demand management and incentive structures more consciously, effectively, and efficiently.

Preliminary List of Pricing Strategies

The strategies that follow are an initial list of ways that WSF can manage demand and increase efficiency in asset utilization. All of these strategies have a pricing and operations component. Variations of each strategy and existing models in operation are added where relevant. These and other strategies should be viewed as a menu of options that could be combined in various ways to create a coherent package that reflects the needs of terminals, routes, travel sheds and the system as a whole.

- **Congestion pricing** is a policy that charges a user fee in order to reflect the value of using a scarce resource—here, space on a ferry and terminal docks. Congestion pricing comes with many names—such as peak-load, value, time-of-day or discriminatory pricing—but the most important differences relate to the implementation of the fee structure. Implementation forms include:
    - Uniform tolls during a set time period based on typical congestion patterns at the location;
    - Variable tolls across locations based on real-time monitoring of congestion conditions.

  Given the nature of WSF as a system with a set number of sailings that can service a finite number of users in a given time period, the first implementation method seems more appropriate. Variable tolls based on real-time monitoring of congestion conditions are likely better suited to a more fluid system, like roadways.

  In contrast, for the better part of the past 30-40 years, WSF customers who traveled the most frequently enjoyed the best per trip price through the use of frequent-user coupon

books. As such, a high percentage of regular commuters traveling during the most congested periods are in fact paying the lowest possible price for their trip.

As applied to WSF, congestion pricing would most likely be considered primarily for vehicle users since capacity for autos is the existing and foreseeable constraint on the system. Congestion pricing could on one or more routes include lowering non-peak fares in order to 1) shift demand from peak periods; 2) increase overall ridership; and, (3) shift vehicle users to walk-on passengers. Information on elasticity and likely responses will be gathered by route to help inform this analysis.

Consistent with ESHB 2358's direction that pricing and operational strategies may vary by route, congestion pricing could take different forms on WSF's routes. The definition of peak will also vary by terminal and route, with a decision to be made whether congestion pricing is applied only to the most heavily used sailing of the day or to all sailings within the defined peak period.

- **Fees that would support operational strategies.** There are a number of operational strategies that may require a pricing component to be effective. These are likely to include:
  - **A reservation system** is "a means of controlling traffic demand to fit available service capacity," according to the 1991 WSDOT *San Juan Ferries Reservations Program Feasibility Study*. This would be an extension of the WSF reservation system already provided for international travel routes (Anacortes-Sidney). Passengers could reserve space on a vessel via phone, internet, or terminal stations and counters. Pricing components of the reservation system that would require further study include:
    - Existence of a reservation fee, and its amount;
    - Reservation cancellation policy, and associated fee;
    - Treatment of distinct ferry users (commuters, island residents, tourists, etc).

    Since there are fewer constraints on passenger walk-on service, reservation policies may potentially be applicable only to auto traffic and may vary both by route and by type of vehicle (i.e. passenger auto, freight trucks, recreational vehicles).
  - **High-occupancy toll (HOT) lanes** are a hybrid system that combines voluntary congestion pricing and reservations. This strategy would require a creation of high-occupancy vehicle (HOV) lanes—such as those on freeways—at ferry terminals that would give priority to vehicles willing to pay a toll for assured passage on the next ferry. The lanes could also give priority to high-occupancy vehicles, such as its freeway counterpart does, or other sub-groups of vehicles deemed appropriate.
- **Mode shift strategies.** Given that on most routes there is a ready availability of passenger capacity even during the most congested periods for vehicle demand, the most effective demand management tools might be to encourage ferry passengers to use other

modes (walk-on, bicycle, motorcycle, vanpool, and transit) of travel to access ferry services. Pricing mechanisms for implementing mode shifts include:

- Pricing vehicles at a higher rate than other modes;
- Eliminating certain vehicle discounts or offering additional discounts to passengers for travel during non-congested periods.

Vehicle pricing and transit connections were identified respectively as "a potentially high-benefit" and "most promising" strategies in the *WSF White Paper*.

- **Discounts for off-peak travel.** A potential strategy that could be complimentary to a congestion pricing strategy is to offer discounts for travel during off-peak period or in the off-peak direction during peak periods. This would potentially bring new riders to the system, shift some existing riders out of the congested periods and increase the overall utilization of the system's assets.

Relationship of Pricing Strategies to Fare Collection Systems

A consideration for any new pricing strategy will be the ability for WSF to implement the pricing structure which will be largely dependent on the capabilities of the fare collection systems. WSF currently uses its new Electronic Fare System (EFS) for fare collection. EFS uses a stored ride method for tracking fares. This means that a customer buys a given number of trips at a set fee (either a single ride or multiple rides often at a discount). These trips are stored on a card, and each time the customer rides a ferry, one of the trips is deducted from his card. This type of stored-ride system creates additional challenges relating to implementing certain types of pricing strategies such as varying the price based on time of day or for certain peak period trips for a given route (customers might need to purchase different products – a peak pass and a non-peak pass) .

In 2008, WSF plans to add the SmartCard system used by other WSDOT entities like rail and buses. SmartCard is based on a stored-value system. In practice this means that a customer puts a set amount of money on his or her card, and money is deducted when the customer uses the card to purchase rides. This type of system allows greater flexibility in the types of pricing strategies that could be employed by WSF.

Another potential fare collection system to be considered is use of the vehicle transponders that WSDOT uses for highway toll collection. This may provide a convenience to customers who already use the vehicle transponders, but given the operational and terminal impacts that adopting this fare collection system would entail, it is likely to be quite costly and potentially infeasible.

Relationship of Pricing Strategies to Other Transportation System Components: Areas for Further Study

The potential effectiveness of the pricing strategies WSF chooses to employ is directly related to other transportation system components. If customers have a mode of transportation available to them other than ferries (like bridges, highways, etc), the cost in terms of dollars and time of the other mode will affect the customers' decision. With that in mind, the following areas require further study:

- **One-point versus two-point toll collection.** On many routes, WSF only collects fares from travelers headed in one direction. If a potential customer has the ability to drive one leg of his or her trip and return via ferry without paying a fare, this causes shifts in ridership patterns and potential revenue losses that may be undesirable in the aggregate. To effectively employ certain types of pricing strategies, WSF may need to switch to two-point toll collection. This switch entails operational and cost impacts that need to be further analyzed
- **Tacoma Narrows Bridge (TNB) toll.** The toll recently instituted on the TNB has the potential to change WSF ridership patterns. These shifts, and the ability to manage them using pricing strategies is an area for further study

Potential Operational Issues

The strategies listed above require varying degrees of operational changes. Potential implications of implementing the strategies that warrant further study include:

- **WSF staffing requirements**: Extra terminal staff may be needed for the implementation of reservation systems, HOT lanes, and additional holding facilities in order to take reservations or direct vehicle traffic and segregation. eTicketing and the SmartCard system, on the other hand, may reduce tollbooth staffing. The costs associated with changes in staff size must be considered in further analysis of these options.
- **Schedule modifications:** Changes in schedules may have terminal and operational impacts.
- **Increase in terminal capacity and facilities**: Vehicle segregation and holding require increased space on-dock or off-dock. Increased transit connectivity may require additional terminal facilities, such as ramps, waiting spaces, etc. Congestion pricing, HOT lanes, and reservations may also require additional terminal tolling booths, and the possible reinstatement of two-point tolls for all routes. There are significant capital investments and operating costs that come with these additions. The physical, environmental, political, and fiscal feasibility of enhancing capacity should be evaluated at each terminal location.
- **Technology and systems impacts**: Variable congestion pricing, HOT lanes, and reservations require an expansion of technology capacity. Existing technology—such as the system in place for international reservations—as well as developing technology in WSF and WSDOT—such as EFS and "Good to Go!" HOT lane transponder—should be leveraged and integrated wherever possible.
- **Development of new protocols and procedures**: With any significant change in operations, WSF staff must be informed and trained. The time involved doing so could vary considerably depending on the strategy being introduced.

Key Evaluative Criteria for Potential Pricing Strategies

In determining recommendations, pricing strategies should be evaluated by their impact on: 1) demand 2) customer service 3) revenue generation and 4) impact on users, capacity and

communities. While these criteria are mentioned in the Ferry Bill or have been used in prior WSF evaluations, no explicit prioritization is stated. In later stages of analysis, prioritization and the balancing of these considerations should be clear or further guidance may be warranted. Below are some initial questions to guide data collection and analysis as well as begin to frame how individual strategies might be evaluated.

Demand Impacts. Managing ferry demand—and vehicle ferry demand in particular—is an integral part of the Legislature's directive. Questions include:

- What is the estimated demand elasticity for vehicles, walk-ons, bicycles, motorcycles, and vanpools?
- What is the estimated cross-elasticity for walk-ons, bicycles, motorcycles, vanpools, and transit if vehicle fees are increased?
    - Do terminals have the added facility capacity to handle the estimated increase in demand of other modes?
- How does demand elasticity differ for rider sub-groups (commuters, tourists, island residents, etc)?
- How does demand elasticity differ by travel routes?
- How does one measure the effectiveness of demand response?

Customer Service. "Improving the quality and timeliness of service" is a stated goal in the Ferry Bill. Therefore, it is important that each operational strategy is evaluated according to its effects and perceived effects on the service toward different customer groups. For example, a reservation system may be seen by tourists as an improvement in customer service, but as a hindrance to island residents who would now have to plan their ferry trips further in advance. Questions include:

- How do the system's different users define "customer service improvements" (more efficient loading/unloading, more amenities on the ferries and in the terminals, etc)?
- How would the public respond to the new strategy and its perceived effect on service?
- Does the strategy affect different user groups in different ways? If so, how? Do certain user groups have special needs that should be addressed?

Revenue Impacts. ESHB 2358 requires that fares be set to recover enough funds to meet the needs of the biennial transportation operating budget. It also precludes fares from being used to support capital expenditures, unless such capital support is separately identified in the fare. Before evaluating individual strategies, it is important to ask: What level of revenue generation is desirable and expected? For example, HOT lane and congestion pricing tolls may be priced in a way to recover the costs associated with implementing the systems or in a way to make money for WSF general operations.

Impacts on Users, Capacity and Communities. WSF is an extension of the state highway system. Certain pricing strategies may be seen by users, policymakers, and elected officials as an "unfair" burden. The analysis of options should consider the potential for perceived and/or actual

equity concerns and identify how these might be mitigated while achieving the broader demand management or revenue goals. Questions could include:

- What groups, if any, face a disproportionate burden or benefit from the proposed pricing strategy? Can the strategy be modified to address these concerns? Are there other ways of mitigating these potential impacts while maintaining the demand management or revenue benefits of the strategy?
- What is the public perception of the strategy?
- How might customer behavior change as a result of a proposed pricing strategy? What do the results of the WSTC survey suggest about customer reactions?
- How does this strategy affect users, system capacity, and communities?

This element of the analysis will require coordination with the Washington State Transportation Commission's customer survey to gain a better understanding of the implications and reactions of a broad base of ferry customers to potential pricing strategies or fare concepts.

Relationship to Other Work Elements

The identification, analysis and recommendation of pricing strategies will be closely aligned with several other concurrent tasks including: the WSTC customer survey; the development of terminal design standards; the re-establishment of vehicle LOS standards; the analysis of operational strategies; and, the updated and reconciled ridership forecasts. In addition, the pricing strategies will be a key component of a revised Long Range Plan.

Schedule and Next Steps

This situation assessment memo is a first step in the identification, formulation, and analysis of pricing strategy recommendations. The following time line and actions are tentative and are subject to revision. JTC review of recommendations will occur throughout the process.

- **October 2007-February 2008**: Preliminary investigation and analysis of pricing strategies by WSF/WSDOT and its consultant teams.
- **March-May 2008**: Incorporation of survey results to analysis and recommendations.
- **May-June 2008**: First draft of overall pricing strategy recommendations.
- **June-July 2008**: Public outreach and feedback on first draft through FAC and other meetings.
- **August-October 2008**: Incorporation of pricing strategy recommendations into LRP.
- **December 2008**: Adoption of the Long Range Plan.